

# SOUTHWEST POWER POOL

MONTANA LEGISLATURE  
SEPTEMBER 23, 2021



*Helping our members work together to keep  
the lights on... today and in the future.*



SouthwestPowerPool



SPPorg



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# TODAY'S PRESENTATION

INTRODUCTION TO SPP  
WESTERN ENERGY SERVICES  
HOW WE DO BUSINESS



*Helping our members work together to keep  
the lights on... today and in the future.*



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# INTRODUCTION TO SPP



*Helping our members work together to keep  
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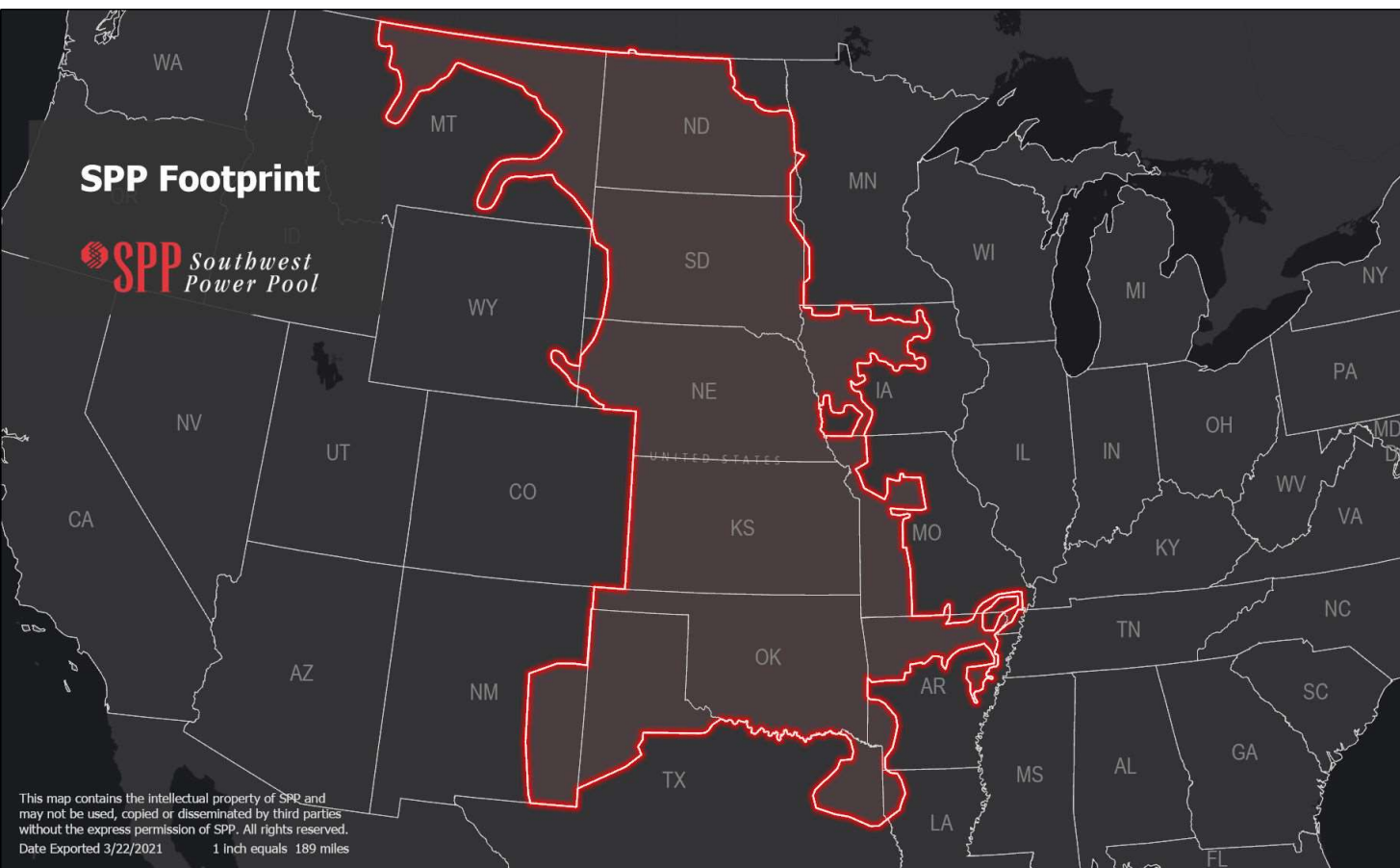
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## OPERATING REGION

- Service territory: 552,885 square miles
- Population served: Approx. 18 million
- Generating plants: 1,162\*
- Substations: 6,140\*
- 70,025 Miles of Transmission

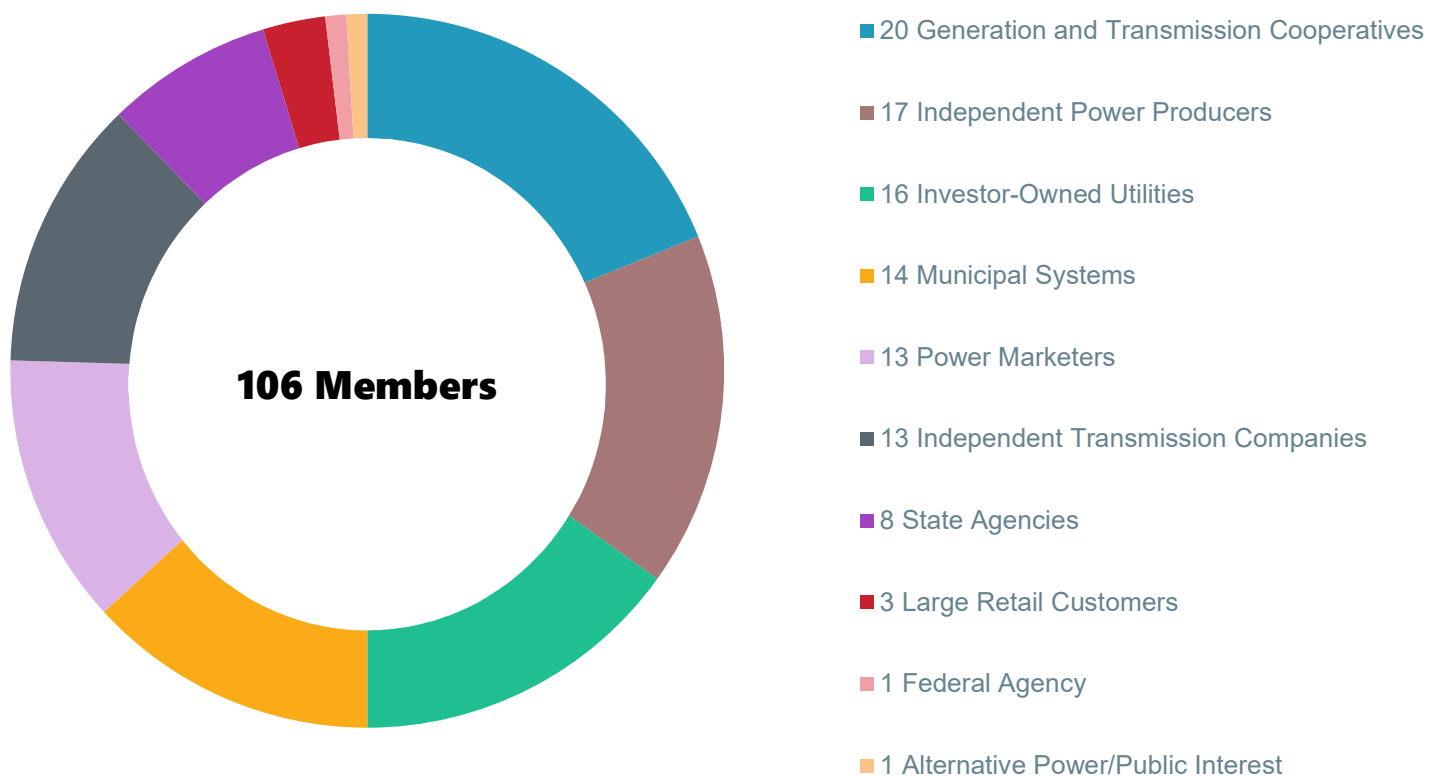
\* In SPP's reliability coordination footprint



**OUR MISSION:** Working together to responsibly and economically keep the lights on today and in the future.

**OUR VISION:** Leading our industry to a brighter future while delivering the best energy value.

## SPP'S 106 MEMBERS: TRUSTED RELATIONSHIPS & PASSIONATELY ENGAGED



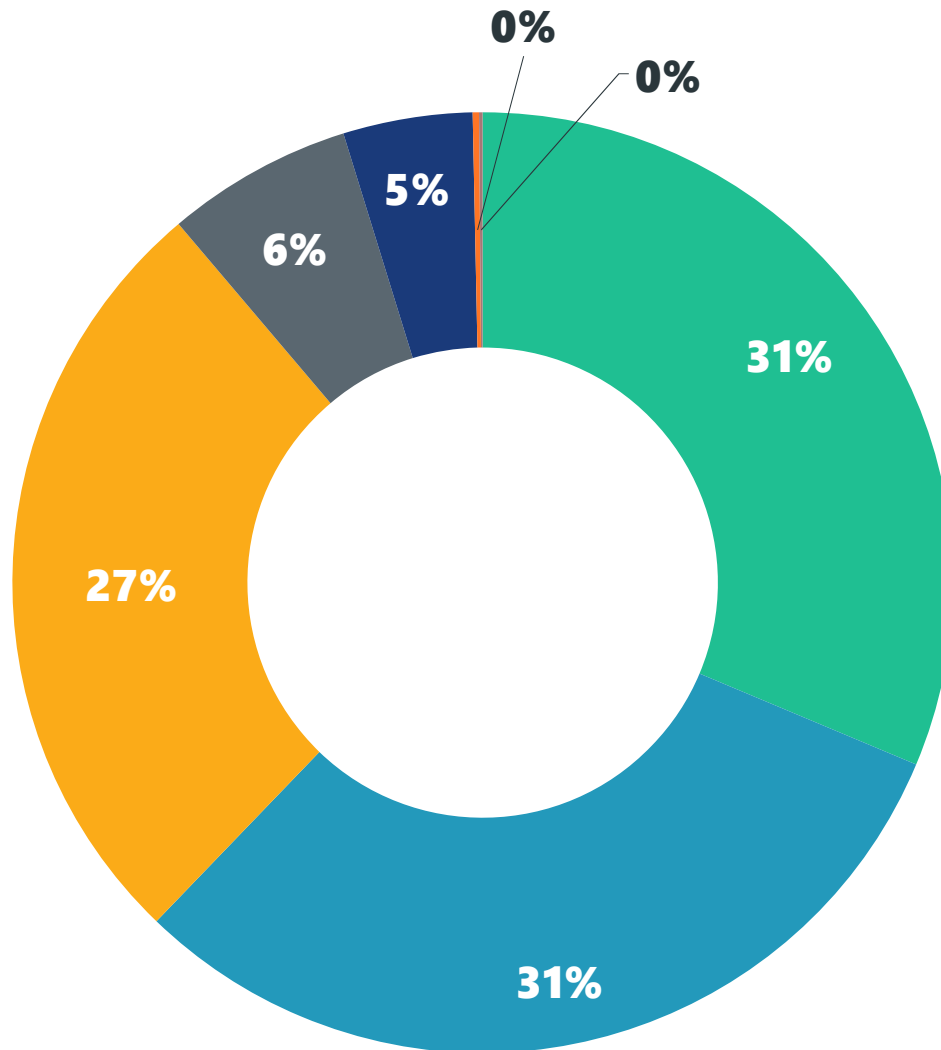
July 2021



## RELIABILITY COORDINATION: AIR TRAFFIC CONTROLLERS OF THE BULK POWER GRID

- Monitor grid 24 x 365
- Anticipate problems
- Take preemptive action
- Coordinate regional response
- Independent
- Comply with more than 5,500 pages of reliability standards and criteria

## 2020 ENERGY PRODUCTION BY FUEL TYPE: 262.730 TWH TOTAL



- Wind (31.32%)
- Coal (30.88%)
- Natural Gas (26.61%)
- Nuclear (6.40%)
- Hydro (4.45%)
- Solar (0.22%)
- Other (0.12%)

# WESTERN ENERGY SERVICES

RELIABILITY COORDINATOR

WESTERN ENERGY IMBALANCE SERVICE

SPP WEST

WESTERN RESOURCE ADEQUACY PROGRAM



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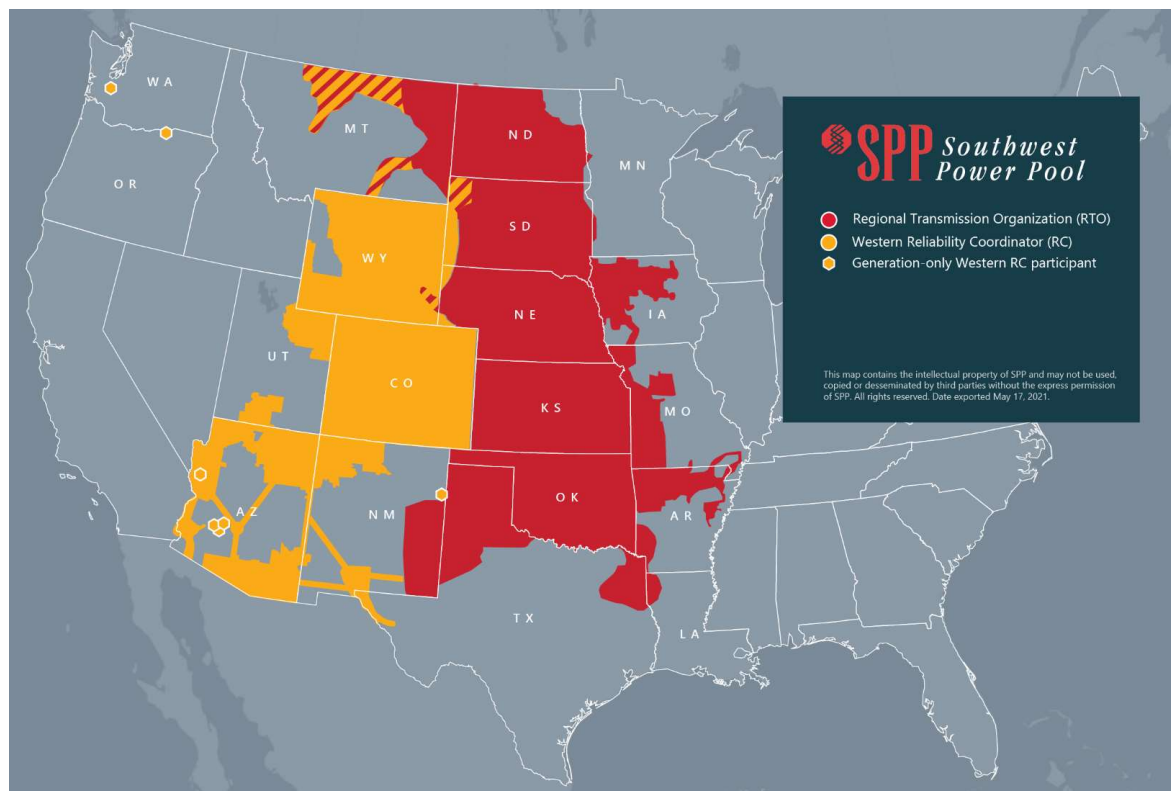


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# RELIABILITY COORDINATOR

# WESTERN RELIABILITY COORDINATION SERVICE

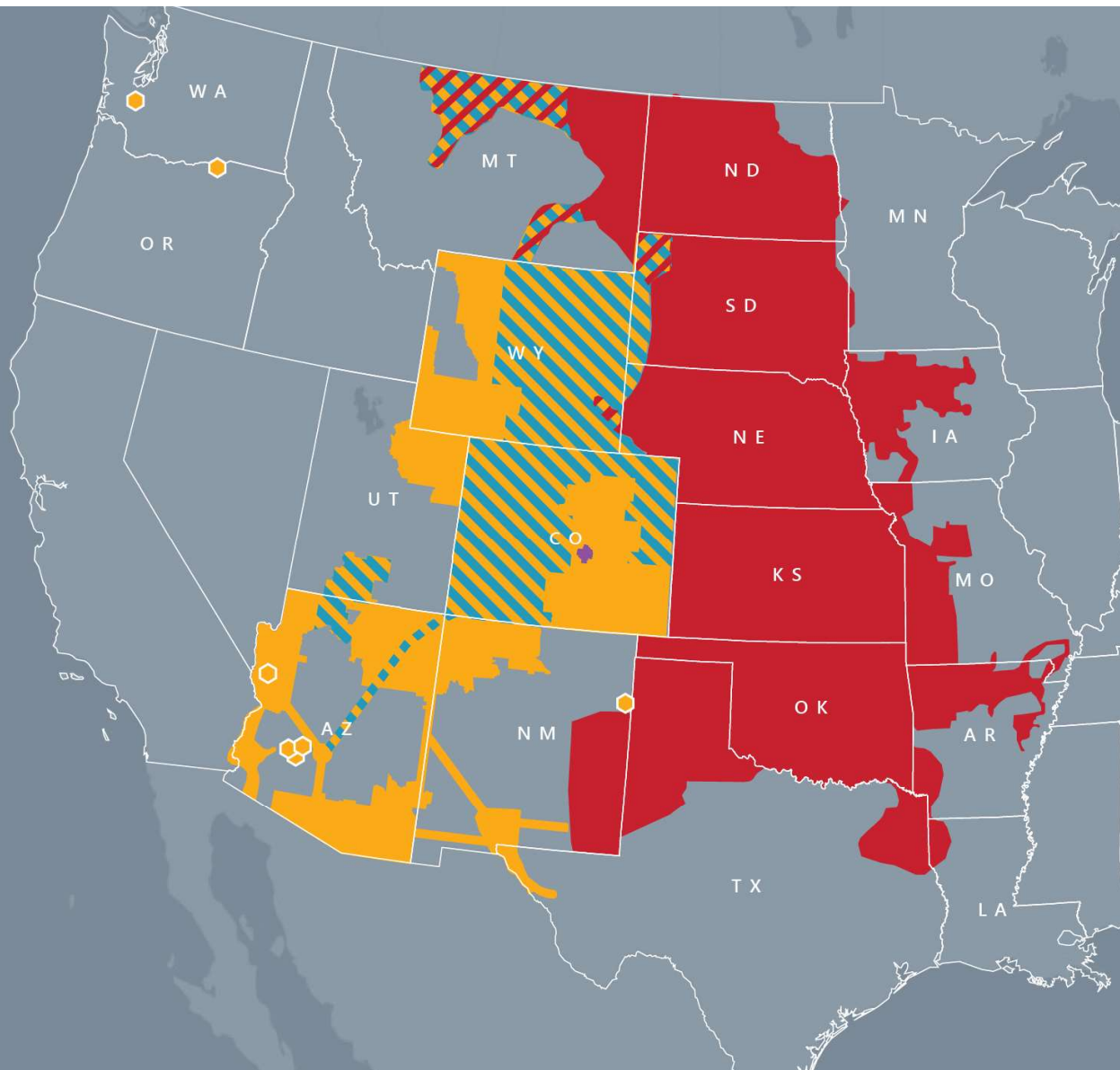
SPP-provided RC service launched December 2019








## CUSTOMERS

- Arizona Electric Power Cooperative, Inc.
- Black Hills Energy's three electric utilities: Black Hills Power, Inc., Cheyenne Light, Fuel and Power Company, and Black Hills Colorado Electric, Inc.
- City of Farmington, NM
- Colorado Springs Utilities
- El Paso Electric Company
- Intermountain Rural Electric Association
- Platte River Power Authority
- Public Service Company of Colorado (Xcel Energy)
- Tri-State Generation and Transmission Association
- Tucson Electric Power
- Western Area Power Administration (WAPA) Desert Southwest Region, WAPA Rocky Mountain Region, and WAPA Upper Great Plains – West
- GridForce Energy Management

# WEIS MARKET & SPP WEST



## **SPP** *Southwest Power Pool*

-  Regional Transmission Organization (RTO)
-  Western Energy Imbalance Service (WEIS) and SPP RTO West
-  Colorado Springs Utilities (WEIS in April 2022; SPP RTO West)
-  Western Reliability Coordinator (RC)
-  Generation-only Western RC participant

### SPP West prospective members:

- Basin Electric Cooperative
- Tri-State G&T
- Deseret
- MEAN
- WAPA - Upper Great Plains
- WAPA - Rocky Mountain Region
- WAPA - Colorado River Storage Project
- Colorado Springs Utilities

WEIS Launched February 1, 2021

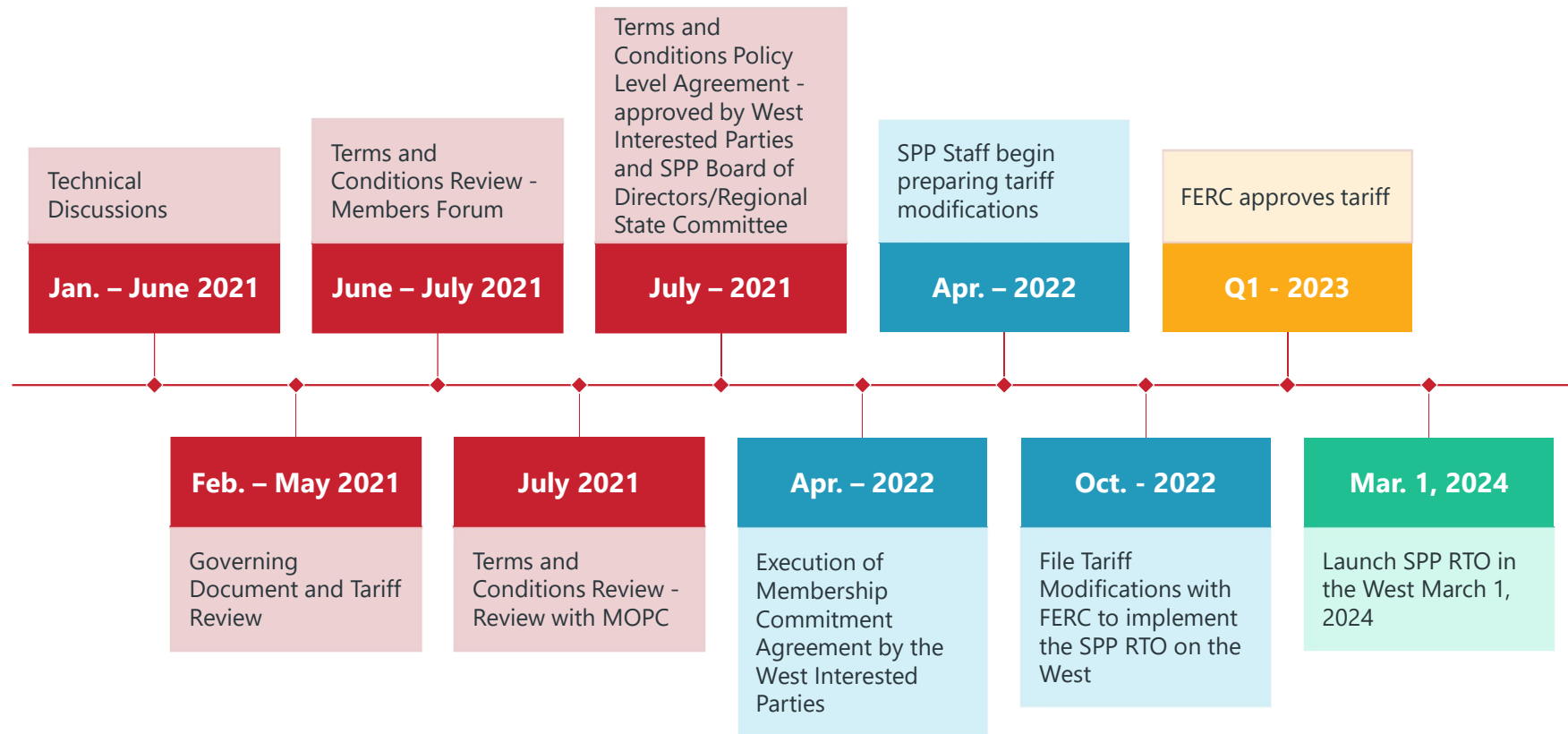
## KEY WEIS FEATURES: PRODUCTS, PRICING AND DISPATCH

DESIGN COMPONENT	DESCRIPTION
Market Product	Energy imbalance (five-minute)
Supply Adequacy	Supply adequacy checked day-ahead and before each operating hour
Pricing Mechanism	Locational Marginal Prices (LMP)
Dispatch	SPP sends resources real-time security constrained dispatch signals calculated by its market clearing engine (MCE)
Unit Commitment	Each entity is responsible for commitment of generation to meet its real-time obligation

## KEY WEIS FEATURES: SETTLEMENTS

DESIGN COMPONENT	DESCRIPTION
Settlement Responsibilities	SPP provides centralized calculation, collection and distribution of market settlements.
Settlement Granularity	Five-minute
Settlement Timeline	Daily settlement statements

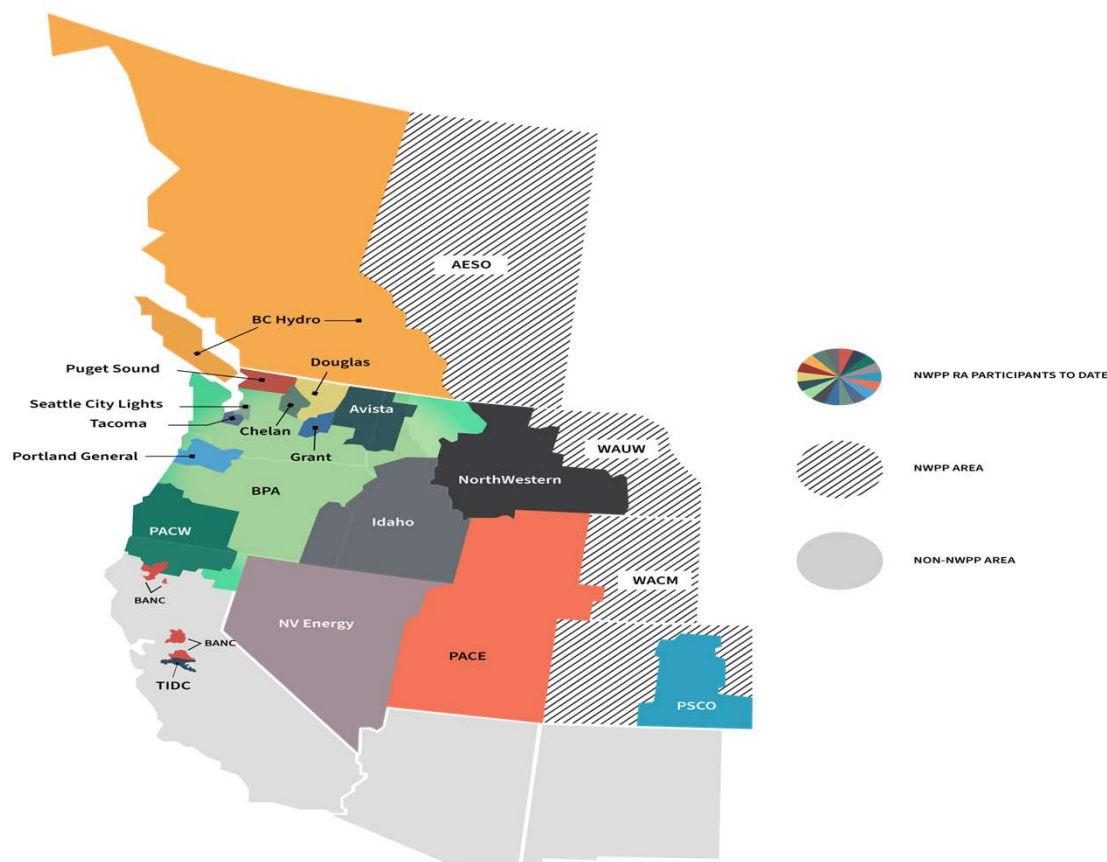
# RTO EXPANSION TIMELINE



# **WESTERN RESOURCE ADEQUACY PROGRAM**

# WHO IS NWPP?

- NWPP Corporation helps member companies achieve benefits of coordinated operations
- ~18 employees
- ~58GW of coincident peak load
- 16 BAs
- 33 Members
- Currently provides reserve sharing, frequency response sharing, Operator training and other services



# WESTERN RA: PROGRAM OPERATOR RESPONSIBILITIES

Perform loss of load expectation studies and set the planning reserve margin

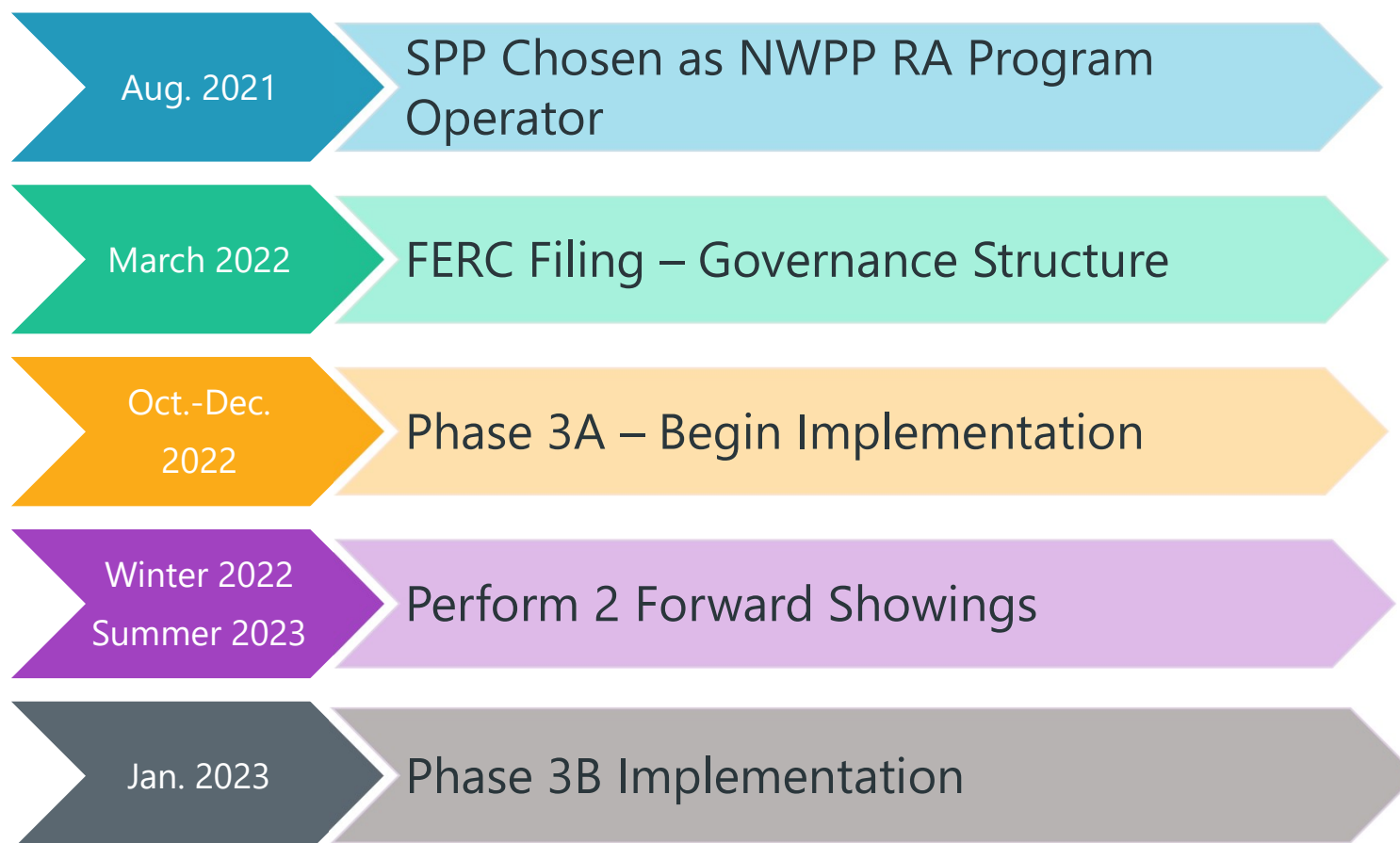
Calculate cost of new entry

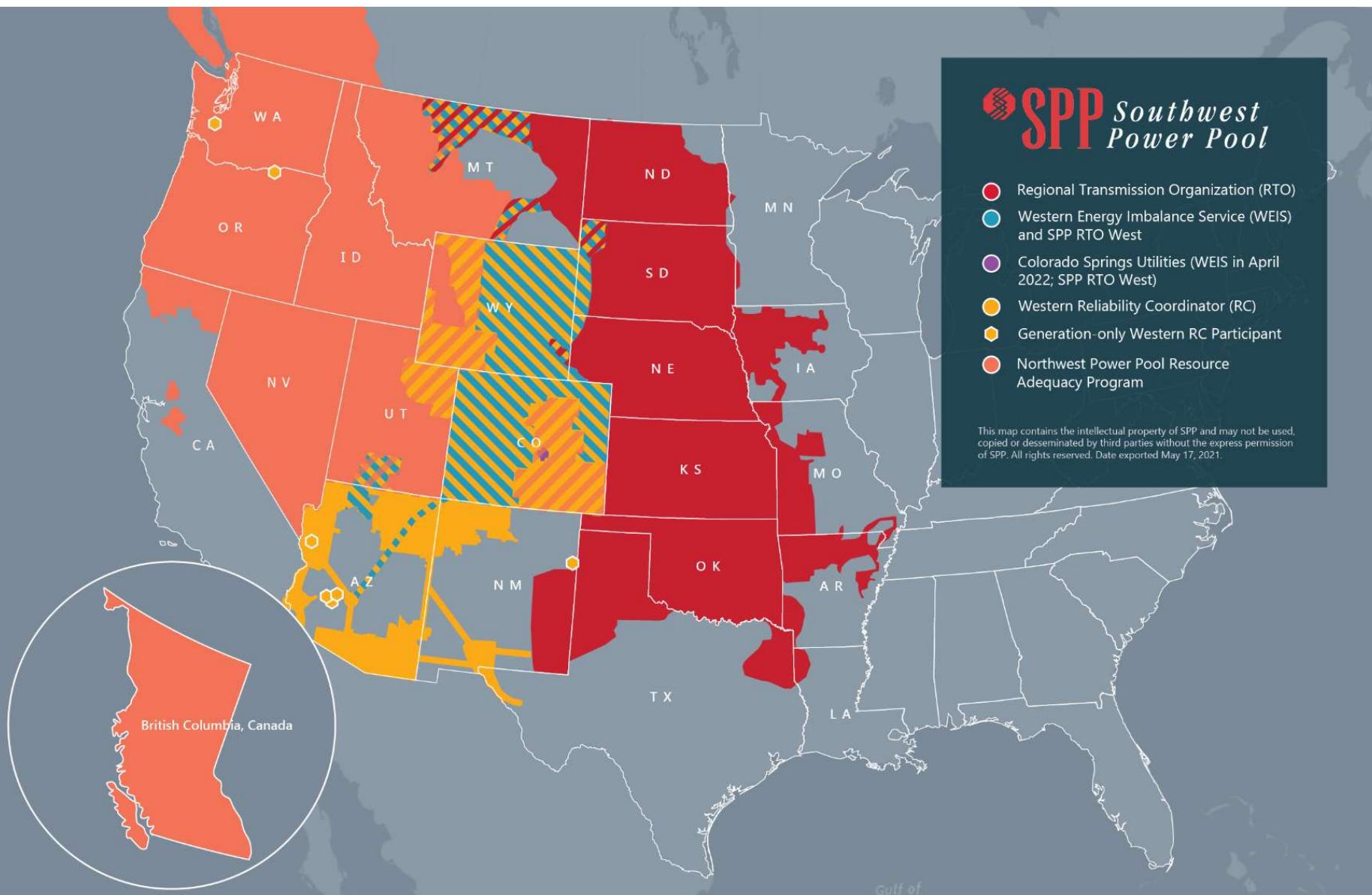
Administer the forward-showing and operational programs

Evaluate and determine the qualified capacity contribution of resources

Maintain high reliability and security requirements

## WESTERN RA: STEPS FORWARD





# HOW WE DO BUSINESS

TRACK RECORD OF SUCCESS  
GOVERNANCE



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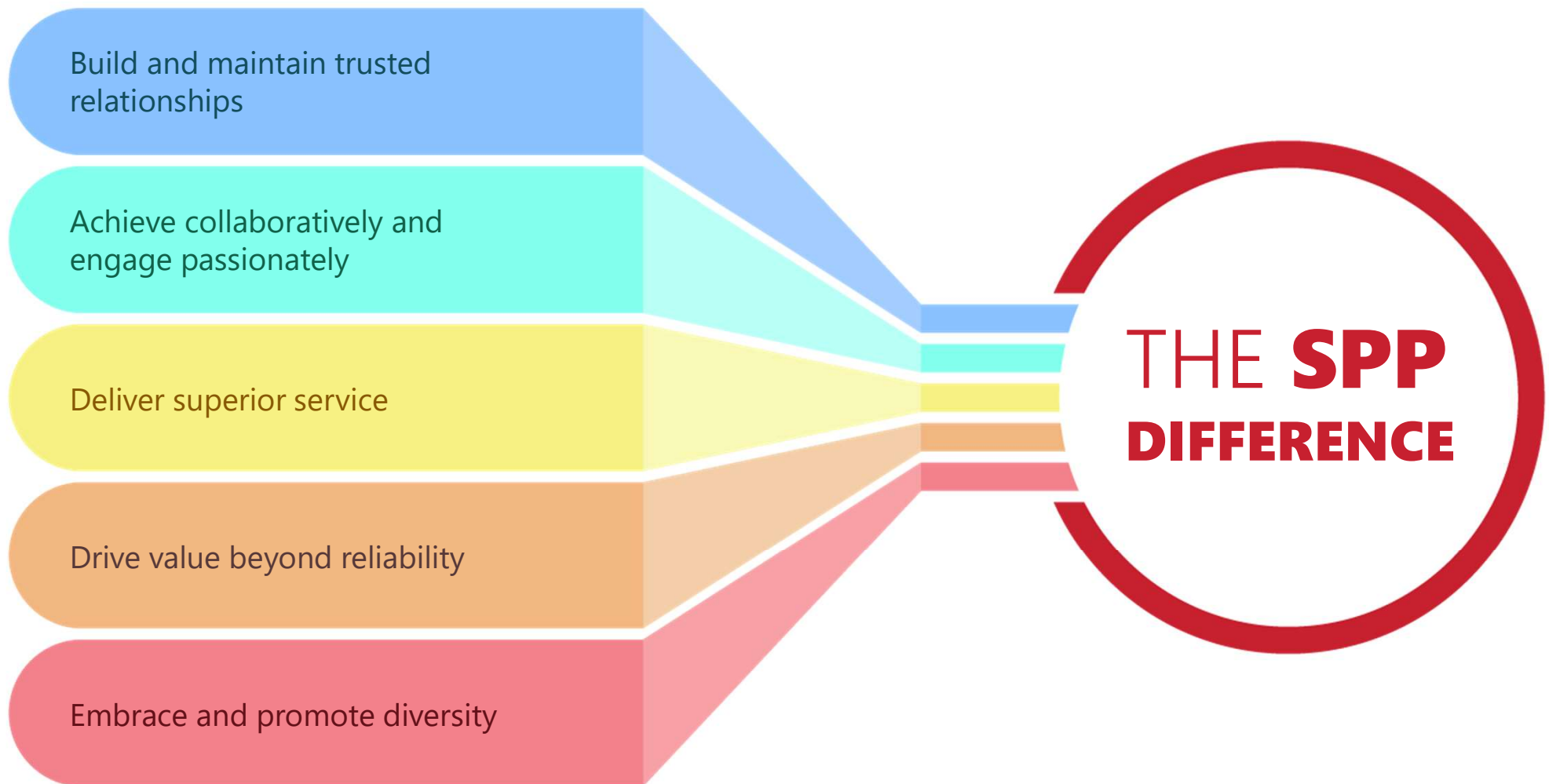
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# **TRACK RECORD OF SUCCESS**

# THE BIG PICTURE

- More than a decade of successful market administration that beats counterparts in terms of affordability and reliability

## First energy imbalance service

2007

Returned \$103M in net benefits in first year

A 3-to-1 return on implementation costs

## Integrated Marketplace

First and only such organization to implement a day-ahead market on-schedule and on-budget

Provides average of \$744.3 million in net benefits annually

## Billions in Transactions

SPP settles more than \$20 billion in market transactions annually.

## 75 years of reliability

Certified as a NERC Reliability Coordinator since 1998

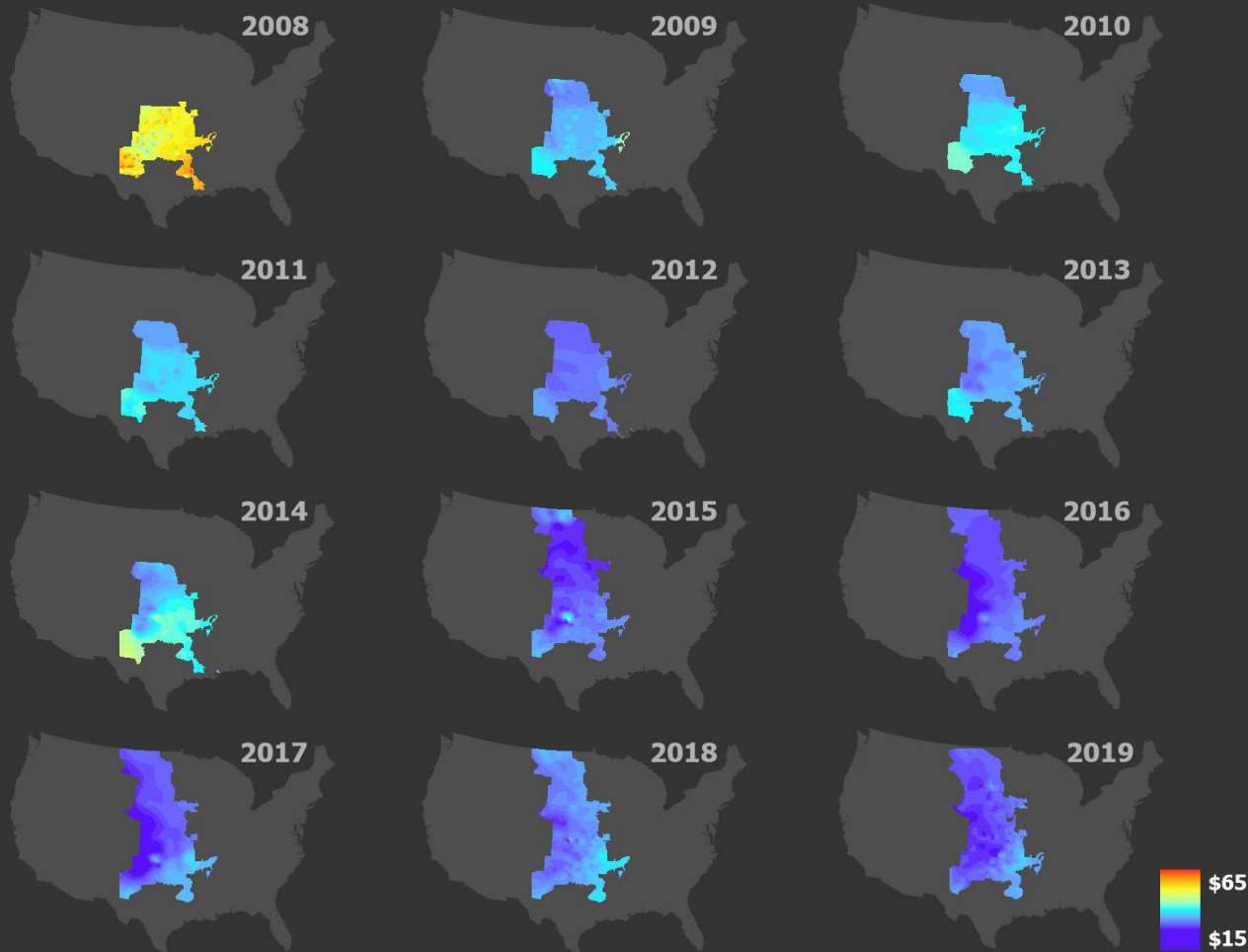
Designated by FERC as a regional transmission organization since 2007

## Transmission upgrades

\$10B in transmission upgrades

Predicted to return benefits at a rate of 3.5-to-1

Annual simple average real-time market prices

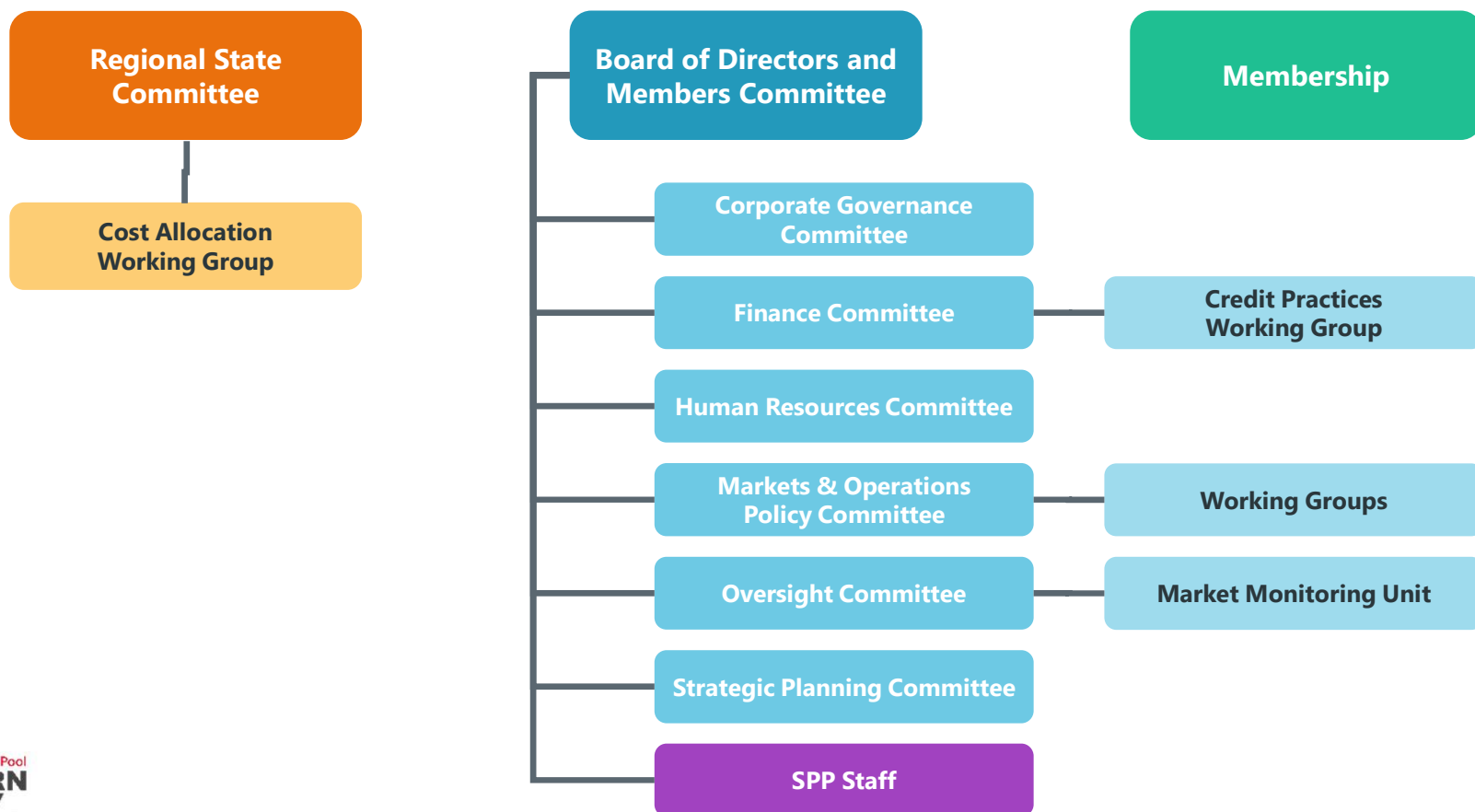


## AVERAGE REAL-TIME MARKET PRICES: 2008-2019

SPP's markets have helped  
lower region-wide wholesale  
electricity prices

# GOVERNANCE

# FACILITATION





# QUESTIONS

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